



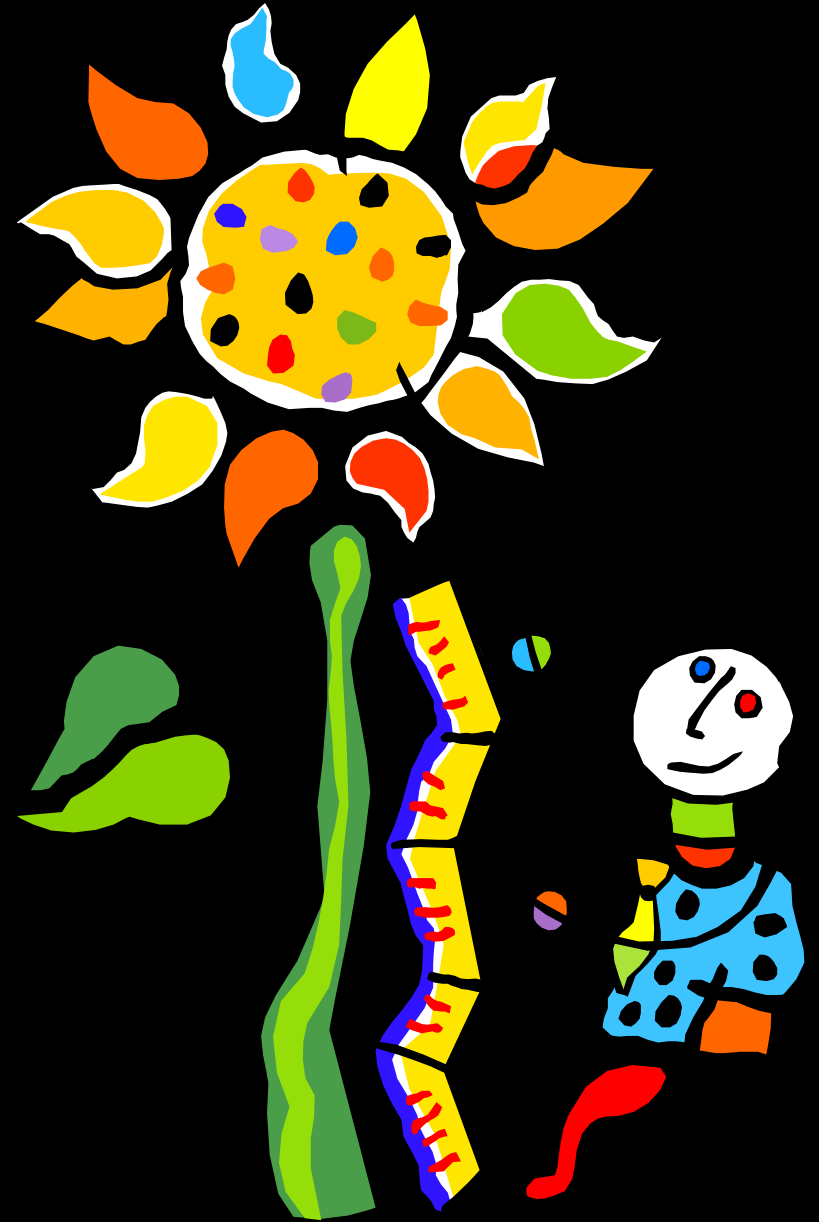
Fairfax County Department of
Family Services



Math and Science All Around

**A Webinar for Early Childhood
Professionals**

What do we
already know
about
children's
learning
related to
math and
science?



Let's play a
"True" or "False"
game.



**Children are
natural investigators, eager
to learn and explore.**

What do you think?

True



OR

False



**Children are
natural mathematicians,
understanding patterns,
rhythms, and routines.**

What do you think?

True



OR

False



**Children are
natural scientists,
curious and full of wonder.**

What do you think?

True



OR

False



**Children are
natural observers, taking
notice of detail and change.**

What do you think?

True

False

OR



**Children learn about the world
through play and through
caring relationships with
others.**

What do you think?

True



OR

False



Wow!

**We know a lot about children and
we know that children naturally
enjoy math and science.**



Learning About Math and Science Through Games



How does playing “I Spy” help children become aware of math and science all around them?



I spy... something that has
many colors - brown, orange,
white, black, blue.

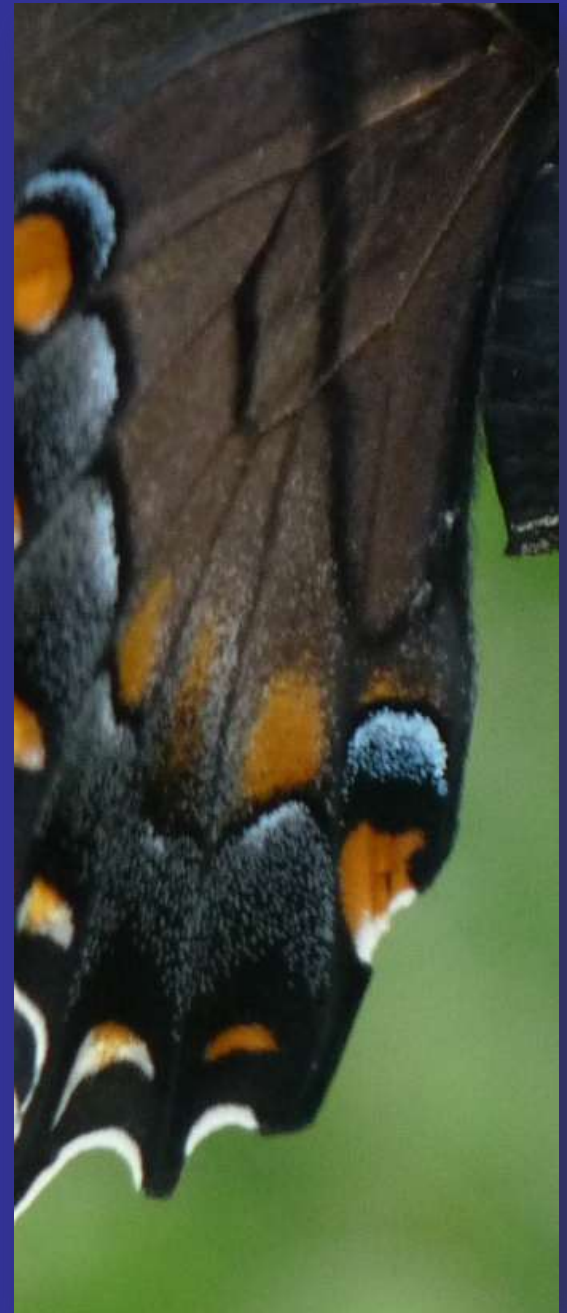
It is very pretty.

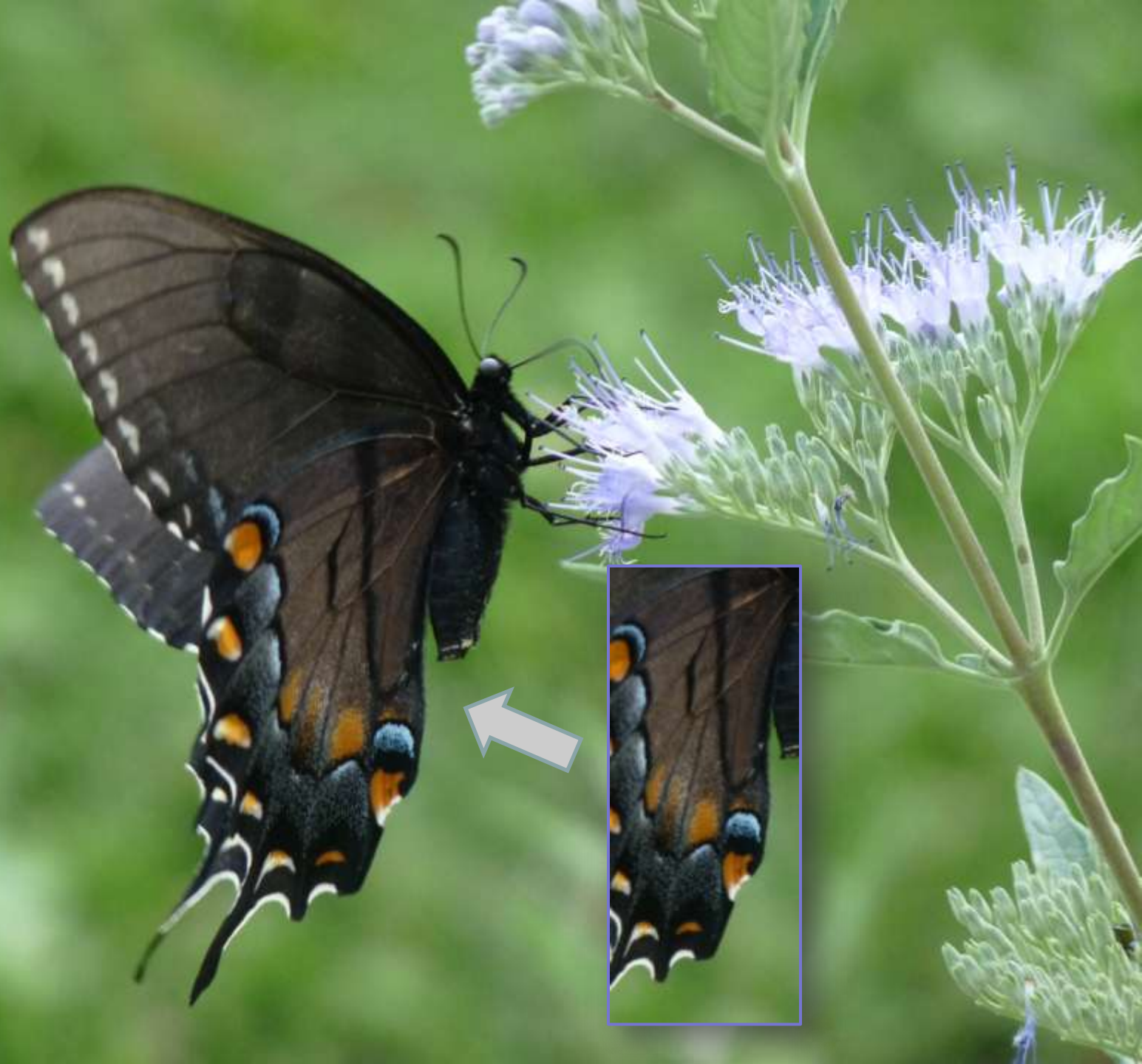
It flies in the air.

The colors on its wings are
arranged in interesting patterns
and shapes.

Here is a picture of part of it.

What could it be





I spy... something
that is furry and has
big ears that point up
toward the sky.

It moves very fast.

Here is a close-up
picture of part of it.

What could it be ?





I spy... something
that is rough and has
lots of lines in it.

It can be found in
many parks, yards,
and forests.

Here is a close-up
picture of part of it.

What could it be 





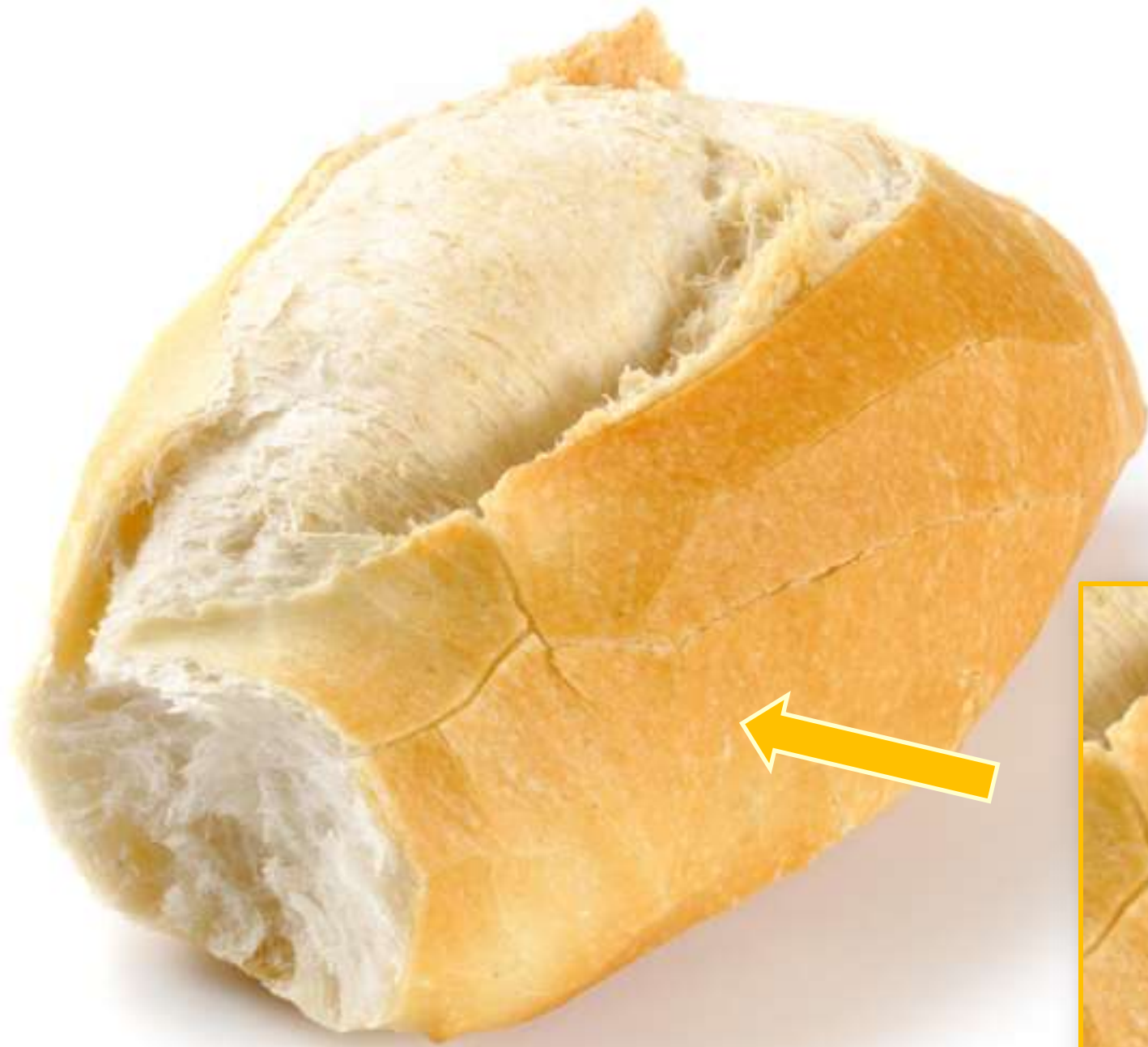
I spy... something
that is soft and crusty
and smells really
good.

Some people like it
best when it is warm.

Here is a picture of
part of it.

What could it be 





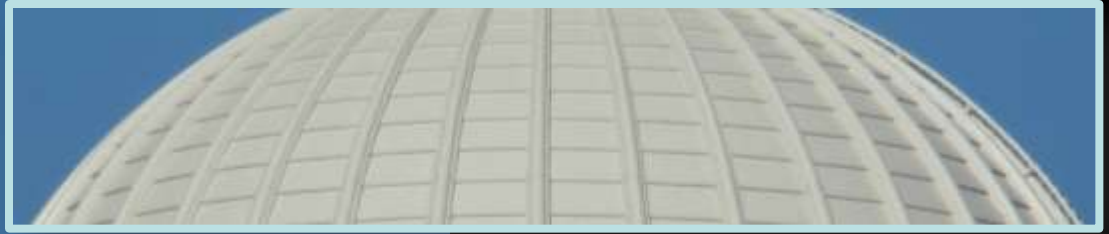
I spy... something that has ridges and is rounded.

It can be found near the top of some structures.

Here is a close-up picture of part of it.

What could it be ?





I spy... something
that is colorful and
likes water.

It can be found in
many places close to
where people live.

Here is a close-up
picture of part of it.

What could it be ?





We have learned so much about how children can explore math and science around them just by playing simple games such as “True or False” and “I Spy.”

True or
False



I Spy...



Reflection Question

**How are
children
natural
mathematicians?**



Children are natural mathematicians.

- **Children like to count objects such as toys, leaves, sticks, books, cookies, clouds, trees, trucks, balls, etc.**
- **Children like to count people such as the number of people in their family or the number of friends in their child care program.**
- **Children learn one-to-one correspondence by matching one item to another such as putting cupcakes into open spaces in a baking pan (1 cupcake/1 space) or by putting one napkin by each plate at the table (1 napkin/1 plate).**
- **Children learn to guess (or count) how many scoops of sand it will take to fill a bucket to the top.**
- **Children learn to make patterns by drawing a circle and then a square and then another circle and then another square and so on.**

We see children using natural math skills every day.

Reflection Question

How are children natural builders, natural architects?



Children enjoy building with many different materials including:

- Wooden, cardboard, or plastic blocks**
- Sticks, twigs, stones, and other items found outdoors**
- Big cardboard boxes such as those from packages received in the mail or from items purchased at the store**
- Recycling materials such as milk jugs, juice containers, cereal boxes, and more**

Children enjoy designing and building structures both indoors and outdoors.

Reflection Question

**How are children
natural explorers,
natural scientists?**



Children naturally love to explore. Whenever children explore new things or new places, they are actually scientists.

Just like scientists, they often try to figure out how things work or what makes something happen.

We can encourage children to be natural explorers and natural scientists by:

- Providing time when the children can be involved in outdoor free play – play time that is child-centered and child-directed. This means that we allow the children to choose the type of play activities that they like and that we support them by providing time, opportunities, and materials that will allow them to engage in active play.**
- Offer opportunities for children to try experiments. Ask the children what they would like to learn and then provide experiences that will allow them to explore the topic of their interest. Allow them to see if their ideas work.**
- Provide books and materials for children to learn about new things, try experiments, and explore new ideas.**
- Take the children on field trips to places where they can be exposed to new ideas and new concepts – and where they can learn from people who are “experts” on a topic.**

Reflection Question

How are children natural designers?



There are many ways we can encourage children to be natural designers, such as:

- Through open-ended creative art experiences (making whatever they choose) such as painting or using playdough**
- By allowing children to choose how to organize play experiences such as doll house furniture and then change it by rearranging the items in the way that they like**
- By adding items to their play such as feathers and stones and seeing what they do with them**
- By allowing children to creatively express themselves through song, dance, art, and movement**
- By providing sturdy musical instruments and allowing the children to experiment with sound, beat, rhythm, and tone**

Reflection Question

How are children natural inventors, creating new things or new approaches to learning?



Children like to be active as they create play experiences and try new approaches to learning.

We can support this natural curiosity by allowing children plenty of time to be involved in free play where they can choose the activities and materials that interest them.



Reflection Question


How do children study and learn about the world around them?



By providing children with many opportunities to be outside and to experience the natural world, they develop new interests, gain new understandings, and develop new skills.

**We can find
math and
science all
around us...**





**All we have to do
is be aware and
look for learning
moments.**

**Create
opportunities.**

Allow time.

Explore.



Office for Children



**We hope that you
will explore the
world around you
and make new
discoveries with
the children in your
program.**

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